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13. ABSTRACT

This procedure is a guide to be used by the Test Engineer, Field Service Representative or Test Officer for shipboard testing the Manually Operated Visual Landing Aid System installation after an original installation or the completion of a major change, overhaul, or extensive repairs. These tests are necessary to demonstrate the integrity of the installation as well as functional readiness for operation.

14. KEY WORDS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
Manually Operated Visual Landing Aid System MARK 1 MOD 2						

I. IDENTIFICATION

The Manually Operated Visual Landing Aid System (MOVLAS), MK1 MOD2, is an emergency signaling system to be used when the primary optical landing system is rendered inoperable. The system is designed to present glide slope information to the pilot of an approaching aircraft in the same visual form presented by the Improved Fresnel Lens Optical Landing System (IFLOLS).

As a substitute for IFLOLS, the MOVLAS has three modes of operation, namely:

(1) IFLOLS DECK EDGE UNIT Installation of the Light Box directly in front of the IFLOLS lens assembly as a substitute for the normal meatball presentation, but still utilizing the datum, wave-off, and cut lights of the IFLOLS.

(2) RIGGED AFT OF IFLOLS Installation completely independent of the IFLOLS. When installed independently, it should be located approximately 50 feet aft of the inoperable system.

(3) STARBOARD INSTALLATION Installation mounted on a base stand assembly located on the flight deck on the starboard side. The approximate location to be aft of the island structure and outboard of the safe parking line. The exact location of this starboard base assembly to be determined by the Air Officer and LSO. In this mode MOVLAS is again complete and independent of the inoperable system.

The above modes are listed in the order of their operational preference.

System Components MOVLAS Mk 1 Mod 2

TABLE 1. List of Components

ASSEMBLY	PART NO.	DESCRIPTION	QUANTITY
* A-100A	613906-1	Light Box	1
A-200	613893-1	LSO Controller	1
A-300A	613898-1	Power Control Box	2
* A-400A	613905-2	Right Hand Datum Box	1
* A-401A	613905-1	Left Hand Datum Box	1
A-500A	613897-1	Datum Control Box	2
A-600A	613899-1	Transformer Box	2
A-1000	613900-1	Watertight Dual Connector Box	1

*Some ships may have two of these components, one for the portside installation and one for the starboard side installation.

Note: The system shall be identified with the serial number assigned to the Light Box (A-100A)

II. INTRODUCTION

This test procedure is intended to be used as a guide by the Naval Air Warfare Center (NAWC); the Shipyard Test Engineer, CAFSU Representative; or Test Officer for testing a Manually Operated Visual Landing Aid System installation, hereinafter referred to as MOVLAS. Tests shall be performed on the following occasions:

1. After the original installation of equipment.
2. After the completion of a major modification, a major overhaul, or extensive repairs.
3. When doubt exists concerning the capability of existing equipment. These tests are necessary to assure the structural integrity of the installation, the operational reliability and the compliance with performance standards.

The testing activity shall make full use of MOVLAS Technical Manual with illustrated Parts Breakdown (NAVAIR 51-4OACA-2): assembly and detail drawings; NAWC publications, and supplemental information, such as Service Bulletins, Service Changes and SHIPALTS.

The testing activity shall forward a report, including the following information, as applicable, to the Director, Naval Air Warfare Center:

1. Name of vessel and identification number.
2. Type of landing system and serial number.
3. SHIPALT number and MOVLAS Service Changes (if applicable).
4. Date of test or tests.
5. Purpose of test.
6. Listing of detail tests conducted.
7. Tabulation of test results.
8. Cause and brief history of operation prior to malfunction, or any such information which may be helpful in determining need for preventive action measures throughout the service.
9. Corrective action taken.
10. Recommendations aimed at improving equipment, cost, safety, preventive maintenance, or training.
11. Photographs, suitably identified.

When certification of subject equipment is desired, the testing activity shall forward to NAWC, Code 4.8.2.3, a copy of this report, with the blank spaces checked or filled in, signed by the representative of the testing activity who conducted the test.

To facilitate test operations, it is desirable to have a single individual designated to act for the shipyard in conferring with the NAWC test personnel. This individual could act as liaison between NAWC personnel and the shipyard and should be authorized to request or issue work orders to the shops.

The shipyard should:

1. Provide the test equipment listed in Section IV, unless other arrangements have been authorized by NAWC for specific cases.

2. Provide shop services to correct malfunction and/or to repair equipment in test. They should also provide aid for any unforeseen circumstances.

3. Provide photographic equipment to photograph in detail the MOVLAS installation. Furnish three copies of photographs to the NAWC In-Service Engineering.

4. Provide shop personnel (including supervisors), as necessary, to do work associated with the operation of MOVLAS and performance of tests on same.

III. TABLE OF CONTENTS

LIST OF TABLES

IV. REQUIRED EQUIPMENT

Equipment required for test and maintenance purposes are:

NAME OF EQUIPMENT	QUANTITY	TYPE
1. Multimeter (V.O.M.)	1	Simpson Model 260 equivalent
2. Sound powered telephone		
3. Assorted hand tools		

V. PRELIMINARY INSPECTION

The purpose of this inspection is to assure insofar as practicable by visual inspection, that MOVLAS has been properly installed in accordance with applicable drawings and references (a) and (b) and is in a state of readiness for subsequent tests and operational use.

a. Examine the following components:

1. LIGHT BOX (A-100A)

(a) The top 17 lamps are amber. _____

(b) The bottom 6 lamps are clear with red filters. _____

(c) Meatball presentation for looseness of lamps or cracked filters. _____

(d) Doors latch in both open and closed positions. _____

(e) Support tube bolts for tightness. _____

(f) Finish for cracks, peeling, rust, and general mechanical integrity. _____

(g) Cap and chain intact for electrical receptacle. _____

(h) Tie-down eyebolt for corrosion and damage. _____

(i) Serial number of light box. _____

2. LSO CONTROLLER (A-200)

(a) The location of deck receptacle is in accordance with installation drawing. _____

(b) Operation of control handle is smooth throughout range. _____

(c) Electrical components for swelling, discoloration and loose or broken terminals. _____

(d) Caps and chains for electrical receptacles are intact. _____

(e) Damage to switch or boot. _____

(f) Indicating light and filter for cracks. _____

(g) Bolts on cover plate for tightness. _____

(h) Finish for cracks, peeling, rust, and general mechanical integrity. _____

(i) Deck receptacle for corrosion or damage. _____

3. POWER CONTROL BOXES (A-300A) Port and Starboard

(a) The locations are in accordance with installation drawings. _____/_____ Port STBD

(b) Mounting bolts for tightness. _____/_____ Port STBD

(c) Cable and wiring for breakage, loose connections, imperfections and proper identification. _____/_____ Port STBD

(d) Electrical components for swelling, discolorations, and loose or broken terminal connections. _____/_____ Port STBD

(e) Damage to knobs, switches, and indicator lamp filters. _____/_____ Port STBD

(f) Circuit breakers for overheating and loose connections. _____/_____ Port STBD

(g) Proper power supply .115 Volts, 60 Hertz, single phase, 40 amperes. _____/_____ Port STBD

4. DATUM BOXES (Right Hand (A-400A) and Left Hand (A-401A)

(a) The extended 5 lamps (datum) and upper lamp (cut) are clear lamps with green filters. _____/_____ Port STBD

(b) The remaining 4 lamps (wave-off) are clear lamps with red filters. _____/_____ Port STBD

(c) Datum, cut, and wave-off presentations for lamps and cracked filters. _____/_____ Port STBD

(d) Doors latch in both open and closed positions. _____/_____ Port STBD

(e) Finish for cracks, peeling, rust, and general integrity. _____/_____ Port STBD

(f) Cap and chain intact for electrical receptacle. _____/_____ Port STBD

5. DATUM CONTROL BOXES (A-500A) Port and Starboard

(a) The locations are in accordance with installation drawings. _____/_____ Port STBD

(b) Mounting bolts for tightness. _____/_____ Port STBD

(c) Cable and wiring for breakage, loose connections, imperfections and proper identification. _____/_____ Port STBD

(d) Electrical components for swelling, discolorations and loose or broken terminal connections. _____/_____ Port STBD

(e) Damage to knobs, switches, and indicator lamp filters. _____/_____ Port STBD

(f) Circuit breakers for overheating and loose _____/_____ Port STBD

6. TRANSFORMER BOXES (A-600A) Port and Starboard

(a) The locations are in accordance with installation _____/_____ Port STBD

NOTE

In mode 2 (50 feet aft of IFLOLS), the transformer box (A-600A) is to be bulkhead mounted. It is to be installed in a protected site near enough to the Deck Edge Bracket Assembly so that the cable run from Transformer Box (A-600A) to each Datum Box (A-400A and A-401A) is not less than 10 feet nor more than 20 feet.

CAUTION

Failure to meet these restrictions on cable length will result in inability to properly adjust the system operating voltages.

(b) Mounting bolts for tightness. _____/_____ Port STBD

(c) Cables and wiring for breakage, loose connections, imperfections and proper identification. _____/_____ Port STBD

(d) Electrical components for swelling, discolorations, and loose or broken terminal connections. _____/_____ Port STBD

7. DUAL CONNECTOR BOX (A-1000)

(a) The location is in accordance with installation drawings. _____ Dwg. No.

NOTE

It is mandatory that the location of this box be in an area that would be easily accessible to operating forces.

(b) Mounting bolts for tightness. _____

(c) Cables and wiring for breakage, loose connections, imperfections, and proper identification. _____

(d) Damage to indicating lamps and lamp filters. _____

VI. OVERALL SYSTEM CHECKOUT PROCEDURE

MOVLAS requires no warm-up time and may be checked and operated immediately after turning on power.

WARNING

Observe the following precautions when working with the equipment:

1. Be certain not to be grounded whenever adjusting equipment.

2. High voltages may be present across terminals that are normally low voltages because of equipment breakdown.

3. Lethal voltages are present at the input sides of circuit breaker switches though the circuit breakers are in the "OFF" position.

4. Do not use test equipment known to be in poor condition.

a. MODE 1 IFLOLS DECK EDGE UNIT

1. Establish sound powered telephone communication between the IFLOLS control room, IFLOLS deck edge unit, and the LSO platform. _____

2. The location of the Light Box deck receptacle is in accordance with installation drawing. _____

3. Check deck receptacle for corrosion and damage. _____

4. Alignment of Light Box is in correct relationship with the IFLOLS lens assemblies both vertically and horizontally. _____

5. Light Box is securely tied down. _____

6. Plug cable C-12A into "Port" receptacle on Dual Connector Box and connect the other end of cable into "J-l" receptacle on LSO Controller. _____

7. Turn on the meatball presentation by placing the circuit breaker on the Power Control Box in the "ON" position. _____

8. Check that the Power Indicating Lights on the Power Control Box, LSO Controller, and the Dual Connector Box illuminate.

_____ / _____ / _____
Pwr Control Box LSO Control. Dual Connect Box

9. Adjust the Source Lights intensity control to obtain the desired brightness setting. _____

10. Slowly move the control handle on the LSO Controller over its extremes of travel while observing the Light Box display. _____

Verify:

(a) That the meatball position follows the control handle motion. _____

(b) Verify meatball lights in 3-4-3 lamp pattern from top to bottom _____

(c) That the pre-heat is functioning so as to keep the lamp filament temperature at the threshold of visible radiation. _____

11. Move the control handle to center detent position and observe that the meatball is lined up with the datum lights. _____

12. Move the control handle to, and past the bottom detent position and verify that the mode switch (S24) when actuated, removes the bottom 3 lamps on the Light Box from the circuit. Move the control handle to and past the top detent position and verify that the mode switch (S25) when actuated, removes the top 3 lamps on the Light Box from the circuit _____

13. Verify that every lamp in the Light Box has either pre-heat or full lamp voltage supplied to it at all times. _____

14. Verify the proper functioning of the wave off and cut lights.

(a) From the LSO pickle switch. _____
(1) Initiate a wave off from the pickle switch.
(2) Check for proper operation of the wave off lights.
(3) Turn of the wave off.
(4) Check for proper operation of the cut lights.

(b) From the air boss wave off switch _____ / _____
(1) Initiate a wave off from the air bosses wave off switch. Wave-off Cut
(2) Check for proper operation of the wave off lights.
(3) Turn of the wave off.

b. MODE 2 MOVLAS RIGGED AFT OF IFLOLS

1. Establish sound powered telephone communication between the IFLOLS Control Room, the MOVLAS Deck Edge Bracket, and the LSO platform. _____

2. The location of the Deck Edge Bracket is in accordance with the installation drawing. _____

3. Check Deck Edge Bracket for corrosion and damage. _____

4. Datum Boxes (A-400A and A-401A) securely held in place by retaining pins. _____ / _____
A-400A A-401A

5. Datum Boxes (A-400A and A-401) securely tied down _____/_____ A-400A A-401A

6. Light Box is securely tied down. _____

7. Verify that cables C-5A and C-5B are connected to the Datum Boxes and that cable C-3B is connected to the Light Box. _____/_____ Datum Box Light Box

8. Verify that cable C-12A is plugged into "Port" receptacle on Dual Connector Box and that the other end is plugged into the "J-1" receptacle on the LSO Controller. _____

9. Verify that pickle switch cable is plugged into "J-2" receptacle on LSO Controller. _____

10. Turn on the meatball presentation by placing the circuit breaker on the Power Control Box in the "ON" position. _____

11. Turn on the datum display by placing the circuit breaker switch in the Datum Control Box in the "ON" position. _____

12. Check that the Power Indicating Lights on the Power Control Box, Datum Control Box, LSO Controller, and the Dual Connector Box illuminate.

_____/_____/_____/_____
Pwr Control Box Datum Control Box LSO Controller Dual Connector Box

13. Verify the proper functioning of the wave off and cut lights.
   (a) From the LSO pickle switch. _____
      (1) Initiate a wave off from the pickle switch.
      (2) Check for proper operation of the wave off lights.
      (3) Turn of the wave off.
      (4) Check for proper operation of the cut lights.
   (b) From the air boss wave off switch _____/_____ Wave-off Cut
      (1) Initiate a wave off from the air bosses wave off switch.
      (2) Check for proper operation of the wave off lights.
      (3) Turn of the wave off.

14. Adjust the 4 intensity controls to obtain the desired brightness settings. _____/_____/_____/_____
Source Light Cut light Wave-off light Datum Lights

15. Slowly move the control handle on the LSO. Controller over its extremes of travel while observing the Light Box Display. _____

Verify:

(a) That the meatball position follows the control handle motion. _____

(b) Verify meatball lights in 3-4-3 lamp pattern from top to bottom _____

(c) That the pre-heat is functioning so as to keep the lamp filament temperature at the threshold of visible radiation. _____

16. Move the control handle to center detent position and observe that the meatball is lined up with the datum lights. _____

17. Move the control handle to, and past, the bottom detent position and verify that the mode switch, when actuated, removes the bottom 3 lamps on the Light Box from the circuit. Move the control handle to and past the top detent position and verify that the mode switch (S25) when actuated, removes the top 3 lamps on the Light Box from the circuit _____

18. Verify that every lamp in the Light Box has either pre-heat or full lamp voltage supplied to it at all times. _____

19. Now that MOVLAS is rigged in the MODE 2 configuration continue with Transformer adjustments as detailed in Section VII, Page 8. _____

c. MODE 3 STARBOARD INSTALLATION

1. Establish sound powered telephone communication between the Starboard Compartment, where the Power Control Box (A-300A) and the Datum Control Box (A-500A) are located, the Starboard Base assembly location; and the LSO platform. _____

2. Identify the compartment where the Power Control Box and the Datum Control Box are located. This compartment is to be within 100 feet of the Starboard Base Assembly _____
Compartment No.

3. Verify that the location of the Base Assembly has been identified by the Air Boss to ensure repeatability of Starboard MOVLAS location. Location outline may be marked on the flight deck. _____

4. Verify that Starboard Base Assembly is placed with the Transformer Box facing forward on the ship and that its cover is perpendicular to the angled deck centerline. _____

5. Check the Starboard Base Assembly for corrosion and damage. _____

6. Verify that the Starboard Base Assembly is secured by the forward eyebolt to a forward deck tie-down and by the aft eyebolt to an aft deck tie-down. _____

7. Verify that the Light Box (A-100A) and the Datum Boxes (A-400A and A-401A) have been removed from the Port Installation and installed on the Starboard Base Assembly. _____

8. Verify that Light Box is tied down. _____

9. Verify that the Datum Boxes are tied down fore and aft. _____

10. Verify that cables C—15A and C—15B are connected to the Datum Boxes and that cable C-13 is connected to the Light Box. _____

11. Verify that cable C-l2A is plugged into the "Starboard" receptacle on the Dual Connector Box and that the other end is plugged into the "J-2" receptacle on the LSO Controller. _____

12. Verify that the pickle switch cable is plugged into "J-2" receptacle on the LSO Controller. _____

13. Turn on the meatball presentation by placing the circuit breaker on the Power Control Box, _____

in the "ON" position. _____

14. Turn on the datum display by placing the circuit breaker switch in the Datum Control Box in the "ON" position. _____

15. Check that the Power Indicating Lights on the Power Control Box, Datum Control Box, LSO Controller, and the Dual Connector Box illuminate.

_____/_____/_____/_____
Pwr Control Box Datum Control Box LSO Controller Dual Connector Box

16. Verify the proper functioning of the wave off and cut lights.

a. From the LSO pickle switch. _____
   (1) Initiate a wave off from the pickle switch.
   (2) Check for proper operation of the wave off lights.
   (3) Turn of the wave off.
   (4) Check for proper operation of the cut lights.

b. From the air boss wave off switch _____
   (1) Initiate a wave off from the air bosses wave off switch.
   (2) Check for proper operation of the wave off lights.
   (3) Turn of the wave off.

c. Operate the wave-off and cut switches on the LSO pickle switch and verify operation of this part of presentation. _____/_____
Wave-off Cut

17. Adjust the four intensity controls to obtain the desired brightness settings.

_____/_____/_____/_____
Source Light Cut light Wave-off light Datum Lights

18. Slowly move the control handle on the LSO Controller over its extremes of travel while observing the Light Box display. _____

Verify:

(a) That the meatball position follows the control handle. _____

(b) Verify meatball lights in 3-4-3 lamp pattern from top to bottom _____

(c) That the pre-heat is functioning so as to keep the lamp filament temperature at the threshold of visible radiation. _____

19. Move the control handle to center detent position and observe that the meatball is lined up with the datum lights. _____

20. Move the control handle to, and past, the bottom detent position and verify that the mode switch, when actuated, removes the bottom 3 lamps on the Light Box from the display. Move the control handle to and past the top detent position and verify that the mode switch (S25) when actuated, removes the top 3 lamps on the Light Box from the circuit _____

21. Verify that every lamp in the Light Box, has either pre-heat or full lamp voltage supplied to it at all times. _____

22. Now that MOVLAS is rigged in the Mode 3 configuration, continue with Transformer adjustment as detailed in Section VII. _____

VII. BRIGHTNESS CONTROL AND TRANSFORMER ADJUSTMENTS

NOTE

Since cable lengths vary on each particular ship, it is necessary to compensate for excessive voltage drop by connecting each cable to the proper voltage tap of the particular transformer on initial installation. These adjustments are made in the Power Control Box and in the Transformer Box. For Portside electrical adjustments the MOVLAS shall be rigged in the Mode 2 configuration. This procedure shall be performed for both Port and Starboard installations.

WARNING

When ship's power is supplied to the system, voltages dangerous to life are present in the Power Control Box, the Datum Control Box and the Transformer Box. Never work on these units unless the circuit breaker switches are in the "OFF" position. Even then every caution must be exercise because lethal voltages are still present at the input sides of circuit breaker switches.

a. Pre-Heat Transformer Adjustment - Adjust the pre-heat transformer tap setting at TB8 in the Power Control Box (A-300A) according to the following procedural steps:

1. Verify that the circuit breaker in the Power Control Box is in the "OFF" position.

2. Set the LSO Controller handle in the center detent position and verify that the mode switch (S24) on the controller is in the "ON" position.

3. Turn the "Intensity" Control knob in the Power Control Box counterclockwise to minimum position.

4. Open the Power Control Box and connect the AC voltmeter between terminals TB9-1 and TB9-5 using the lowest convenient voltmeter scale which will read up to 4.0 volts.

5. Place the circuit breaker to the "ON" position. Read voltage and return the circuit breaker to the "OFF" position.

_____/_____
Port STBD
Voltage reading

6. The voltage reading should be between 2.3 and 3.2 volts. If reading is below 2.3 change jumper lead from TB8-1 to the light tap position on TB8 as shown in Table 2. If the reading is above 3.2, change the lead to the low tap connection of TBS as shown in Table 2.

TABLE 2. Pre-heat Transformer Tap Settings	
Tap Settings	Jumper between TB 8-1 and
HIGH	TB8-4
NORMAL	TB8-3
LOW	TB8-2

7. After changing tap connections, repeat step 5 to verify that the proper connection has been made. If two tap connections can be found which will fall within these limits, use the higher tap connection.

b. Power Transformer Adjustment .Adjust the power transformer tap setting at TB3 and TB7 in the Power Control Box (A-300A) according to the following procedural steps:

1. Verify that the circuit breaker in the Power Control Box is in the "OFF" position.

2. Set the LSO Controller handle in the center detent position and verify that the mode switch (S24) on the Controller is in the "0N" position.

3. Turn the "Intensity" Control knob in the Power Control Box counterclockwise to minimum position.

4. Open the Power Control Box and connect the ac voltmeter between terminals TB9-1 and TB9-3, using the lowest convenient ac voltmeter scale which will read 28.0 volts.

5. Verify that the Power Transformer tap on TB3 is at the minimum position, as shown in Table 3.

CAUTION

Do not allow the voltage in step 6 to exceed 28.0 volts.

6. Place the circuit breaker in the "ON position and read the voltage while slowly turning the Intensity Control to full clockwise position. _____ measured voltage at full clockwise setting

7. Rotate the Intensity Control knob to the minimum position and place the circuit breaker switch in "OFF" position.

8. Compare the measured voltage at the maximum intensity setting to the desired value of 27.0 volts. A change of tap position as indicated in Table 3 will change this voltage by approximately 1.1 volts. Using this value and Table 3, determine the proper tap setting to obtain 27.0 ±0.8 volts.

9. Make the tap change and repeat steps 6, 7, and 8, above. Record final voltage and tap setting. _____

10. Remove the voltmeter and close the Power Control Box.

TABLE 3. Power Transformer Tap Setting

Tap Settings	Jumper between TB3—1 and	Lead from TB2-4 to
Max. 1	TB3-6	TB7-5
2	TB3-5	TB7-5
3	TB3-4	TB7-5
4	TB3-3	TB7-5
5	TB3-2	TB7-5
6	TB3-6	TB7-1
7	TB3-5	TB7-1
8	TB3-4	TB7-1
9	TB3-3	TB7-1
Min. 10	TB3-2	TB7-1

c. Cut Transformer Adjustment - Adjust the Cut Transformer tap setting at TB6 in the Transformer Box (A-600A) according to the following procedural steps:

1. Verify that the circuit breaker in the Datum Control Box is in the "OFF" position. _____/_____ Port STBD

2. Verify that cable C-3 for Port operation or C-13 for Starboard operation is properly connected. Verify that cable C-12A is connected to the LSO Controller and to the proper Port or Starboard connector on the Dual Connector Box. _____/_____ Port STBD

3. Verify that the pickle switch is connected to J-2 on the LSO Controller. _____/_____ Port STBD

4. Remove the filter and retainer assembly from one of the two cut lights, allowing the lamp to hang out of the Datum Light Box, and connect the ac voltmeter across the terminals of the lamp, using the lowest convenient voltmeter scale which will read 28.0 volts. _____/_____ Port STBD

5. At the Datum Control Box, turn the "Cut" intensity control down to its minimum position and put the circuit breaker switch in the "ON" position. _____/_____ Port STBD

6. Actuate the "Cut" switch on the LSO pickle switch to turn on the Cut Light.

CAUTION

Do not allow the voltage in step 7 to exceed 28.0 volts.

7. Slowly increase the setting of the "Cut" intensity control to maximum while reading the lamp voltage (step 4). _____/_____ Port STBD

8. Reduce the intensity control setting to minimum and place the circuit breaker switch in "OF F" position. _____/_____ Port STBD

9. Compare the measured voltage at the maximum intensity setting to the desired value of 27.0 volts. A change of one tap position as shown in Table 4, will change this voltage by approximately 1.2 volts. Using this value and Table 4, determine the proper tap setting to obtain 27.0 ± 0.8 volts. _____/_____ Port STBD

10. Make the tap setting at TB6 and repeat steps 5 thru 8 to verify proper operation. Record final voltage and tap setting. _____

11. Remove the voltmeter, cut lamp, filter, and retainer assembly in the Datum Light Box.

TABLE 4. Cut Transformer Tap Settings	
Tap Setting	Lead from TB6-1 to
Max. 1	TB6-5
2	TB6-4
3	TB6-3
Min. 4	TB6-2

d. Wave-off Transformer Adjustment - Adjust the Wave-off transformer tap setting at TB4 in the Transformer Box (A-600A) according to the following procedural steps:

1. Repeat steps 1 thru 3 of Section VII-c

_____/_____
Port STBD

2. Remove the filter and retainer assembly from one of the wave-off lights, allowing the lamp to hang out of the Datum Light Box, and connect the ac voltmeter across the terminals of the lamp, using the lowest convenient voltmeter scale which will read 28 volts.

_____/_____
Port STBD

3. At the Datum Control Box turn the "Wave-Off" intensity control knob to its minimum position.

_____/_____
Port STBD

4. Open the Datum Control Box and install a jumper between terminals A1 and A2 of relay K-1.

_____/_____
Port STBD

5. Close the Datum Control Box and place the aircraft breaker in the "ON" position.

_____/_____
Port STBD

CAUTION

Do not allow the voltage in step 6 to exceed 28.0 volts.

6. Slowly increase the setting of the "Wave-Off" intensity control to maximum while reading the lamp voltage (step 2).

_____/_____
Port STBD

7. Reduce the intensity control setting to minimum and place the circuit breaker switch in "OFF" position.

_____/_____
Port STBD

8. Compare the measured voltage at the maximum intensity setting to the desired value of 27.0 volts. A change of one tap position, as indicated in Table 5, will change this voltage by approximately 1.2 volts. Using this value and Table 5, determine the tap setting to obtain 27.0 ±0.8 volts.

_____/_____
Port STBD

9. Make the tap setting change at TB4 and repeat steps 5 through 8. Record final voltage and tap setting.

_____/_____
Port STBD

10. Remove the ac voltmeter and install the wave-off lamp and the filter and retainer assembly in the Datum Light Box. ____/____ Port STBD

11. Remove the jumper wire from relay K-1 (refer to step 4). ____/____ Port STBD

TABLE 5. Wave-Off Transformer Tap Settings	
Tap Setting	Lead from TB4-1 to
Maximum 1	TB4-5
2	TB4-4
3	TB4-3
Minimum 4	TB4-2

e. Datum Transformer Adjustment .Adjust the Datum Transformer tap setting at TB5 in the Transformer Box (A-600A) according to the following procedural steps:

1. Repeat steps 1 and 2 of Section VH-c. ____/____ Port STBD

2. Remove the filter and retainer assembly from one of the datum lights, allowing the lamp to hang out of the Datum Light Box, and connect the ac voltmeter across the terminals of the lamp using the lowest convenient ac voltmeter scale which will read up to 28.0 volts. ____/____ Port STBD

3. At the Datum Control Box, adjust the "Datum" intensity control to "0", and place the circuit breaker switch to "ON".

CAUTION

Do not allow the voltage in step 4 to exceed 28. 0 volts.

4. Slowly increase the setting of the "Datum intensity control to maximum while reading the lamp voltage (step 2). ____/____ Port STBD

5. Reduce the intensity control to "0", and place the circuit breaker switch in the "OFF" position. ____/____ Port STBD

6. Compare the measured voltage at the maximum intensity setting with the desired value of 27.0 volts. A change of one tap position, as is indicated in Table 6, will change this voltage by approximately 1.2 volts. Using this value and Table 6, determine the tap setting to 27.0 ± 0.8 volts. ____/____ Port STBD

7. Make the tap setting change at TB5 and repeat steps 3 thru 5 Port STBD to verify proper operation. Record final voltage and tap setting. ____/____ Port STBD

8. Remove the ac voltmeter and install the datum lamp and the filter and retainer assembly in the Datum Light Box.

Port / STBD

TABLE 6. Datum Transformer Adjustment	
Tap Setting	Lead from TB5-1 to
Maximum 1	TB5-5
2	TB5-4
3	TB5-3
Minimum 4	TB5-2

VIII. REFERENCES

a. Manually Operated Visual Landing Aid System (MOV LAS) Service Change No. 9.

b. Technical Manual, Operation, Service, and Overhaul Instructions with Illustrated Parts Breakdown, Manually Operated Visual Landing Aid System MK1 MOD 2, NAVAIR 51-40 ACA-2, (under preparation).

IX. CERTIFICATION

This Manually Operated Visual Landing Aid System MK 1 MOD 2, is approved for Fleet Operation.

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